Meaningful Use Workgroup
Subgroup #4 – Population Health
Transcript
May 29, 2012

Presentation

MacKenzie Robertson – Office of the National Coordinator

Thank you very much. Good morning, everyone. This is MacKenzie Robertson in the Office of the National Coordinator. This is the meeting of the HIT Policy Committees Meaningful Use Workgroup Subgroup #4: Improving Population in Public Health. This is a public call. There will be time for public comment at the end. The call is also being transcribed so please be sure to identify yourself before speaking. I'll quickly go through roll, and then, at the end ask any staff members on the line to also identify themselves. Art Davidson?

Art Davidson – Denver Public Health Department – Director

Here.

MacKenzie Robertson – Office of the National Coordinator

Thanks, Art. Charlene Underwood?

Charlene Underwood – Siemens Medical – Director, Government & Industry Affairs

Here.

MacKenzie Robertson – Office of the National Coordinator

Thanks, Charlene. Amy Zimmerman? Marty Fattig?

Marty Fattig – Nemaha County Hospital – Chief Executive Officer

Here.

MacKenzie Robertson – Office of the National Coordinator

Thanks, Marty. Yael Harris? George Hripcsak?

George Hripcsak – Columbia University Dept. of Biomedical Informatics – Chair

Here.

MacKenzie Robertson – Office of the National Coordinator

Thanks, George. And are there any other Meaningful Use Workgroup members on the line?

Greg Pace – Social Security Administration – Deputy Chief Information Officer

This is Greg Pace.

MacKenzie Robertson – Office of the National Coordinator

Thanks, Greg.

Leslie Kelly Hall – Senior Vice President for Policy for Healthwise

Leslie Kelly Hall.

MacKenzie Robertson – Office of the National Coordinator

Good morning, Leslie. And any staff members on the line please identify yourselves.

Michelle Nelson – Office of the National Coordinator

Michelle Nelson.

Jim Daniel – Office of the National Coordinator

Jim Daniel.

Kevin Larsen – Office of the National Coordinator

Kevin Larsen.

MacKenzie Robertson – Office of the National Coordinator

Thanks, Kevin. Art, I'll turn it over to you.

Art Davidson – Denver Public Health Department – Director

Thank you MacKenzie. Good morning, everyone. Once again I want to thank my colleagues Michelle Nelson and Jim Daniel for organizing these sessions. We have a series of very competent panelists for today's testimony. This is the third in a series of three planned listening sessions for the Population Public Health Subgroup of the Meaningful Use workgroup. The testimonies we hear today will be evaluated by the Workgroup for recommendation back to the HIT Policy Committee. Today's testimony should inform the HIT Policy Committee in their advisement role to the mission of ONC and CMS as defined in the HIGHTECH Act.

Our goal is for feasible and well-developed ideas to emerge from these listening sessions and our invited panelists have the experience and knowledge about exchange of information to help our subgroup in this deliberation. This is the third and currently last planned listening session for the Workgroup. We'll then proceed to evaluate the testimony and report back to the Meaningful Use Workgroup in the coming months.

Information about this or other meetings is available at HealthIT.gov website and if you do a simple search for Meaningful Use Workgroup Sub-committee you should be able to get to this site for subgroup four webpage.

This is an open meeting as MacKenzie mentioned, and the Sub-committee seeks community input. If there are questions or comments the phone line will be open at the end of the meeting. If you have any comments for the Committee Workgroup or Sub-committee after this meeting feel free to send those to ONC. They will be appropriately routed to us.

Each of the panelists today were given a series of questions to help get the presentation organized and to support our subgroups mission. These questions were: What are you working on that could help inform Stage III? What barriers have you faced? What infrastructure, policies, tools, training, and/or communication are needed to make this successful and what strategies would you recommend to get there? The panelists have been asked to limit their comments to ten minutes each to ensure time for questions and comments.

I will proceed now to just read some brief biographies. We have six panelists today. The first is Peggy Honoré who is director of the Public Health System, Finance, and Quality Program in the Office of the Assistant Secretary for Health at the U.S. Department of Health and Human Services. She leads activities for HHS Public Health Quality forum to develop a consensus statement on quality in the public health system and report priority areas for improvement to the quality in public health. She has served in private industry, academia, and government at both the federal and state levels and has served in two state health departments.

Thomas Land will be the next presenter. He's the director of the Office of Statistics and Evaluation for the Bureau of Community Health and Prevention at the Massachusetts Department of Public Health. At that department his work has included using small area estimates of tobacco use to guide public health initiatives, the impact of smoke-free workplace laws on heart attack deaths, changes in smoking prevalence in cardiovascular hospitalizations following the implementation of Massachusetts tobacco cessation benefit for Medicaid subscribers, and the use of clinical and counter records from EHRs to estimate the effect of system change on behaviors and health outcomes.

Our next presenter will be Gillian Haney. Ms. Haney is the epidemiologist with the Bureau of Infectious Disease Prevention at the Massachusetts Department of Public Health for over ten years and is currently the director of the Office of Integrated Surveillance and Informatics Services. In this capacity she oversees several large informatics projects including electronic laboratory and health record reporting, the states web-based disease surveillance system, and other aspects of infectious disease reporting and surveillance.

Following Ms. Haney we have Dr. Richard Platt who is professor and chair of the Harvard Medical School Department of Population Medicine at the Harvard Program Healthcare Institute. He is the principal investigator of the CDC's Center of Excellence and Public Health Informatics, at CDS Prevention Epicenter, to the FDA's Mini-Sentinel Program, and AHRQ DEcIDE Center.

Following that, another person from Massachusetts, Julia Gunn who is the director of the Boston Public Health Commission's Communicable Disease Control Division. In addition, she's a member of NACCHO's biosurveillance workgroup and the current president of the International Society for Disease Surveillance.

Finally, our last presenter will be Jim Buehler. Dr. Buehler is director of the Public Health Surveillance and Informatics Program Office at the CDC where he's responsible for leading several large national surveillance systems including the Behavioral Risk Factor Surveillance System, National Notifiable Disease Surveillance System, and BioSense 2.0. These provide a focal point for CDC for supporting public health engagement in the national program to promote meaningful use of electronic health records. The program office provides leadership around informatics services that support nationwide infrastructures to support public health information management and addressing crosscutting issues in surveillance and informatics practice that affects CDC and its collaborators.

With that, I'm going to go ahead and ask that our first presenter, Peggy Honoré, be—her slides be set up and we'll be able to hear from here at this moment.

MacKenzie Robertson – Office of the National Coordinator

Hi, Peggy, before you start I just want to remind everyone to please mute your lines if you're not speaking so we don't get any background noise. Thank you.

Michelle Nelson – Office of the National Coordinator

I also wanted to remind everyone that because we do have a full agenda that we will be letting people know if you are getting close to a ten minute timeframe so we can move on to the next presenter. Thank you for your patience in advance.

Peggy Honoré – Office of Healthcare Quality, Office of the Assistant Secretary for Health – Director, Public Health System, Finance, and Quality Program

Thank you. This is Peggy. Thank you for this opportunity to provide comments that will inform the Policy Committee on Meaningful Use Stage III. I do have an aggressive amount of slides. I won't read through all of these. I'll touch on the more important points as we go through this, but what I specifically want to talk about is how we can use Meaningful Use to eliminate barriers to public health quality.

In 2010 HHS through the Public Health Quality Forum, which was an HHS-wide committee made up of directors and heads of all of the HHS agencies or their designees, went through a very extensive process to identify areas in need of quality improvement within the Public Health System. We identified six priority areas and the number one area was population health metrics and IT. We saw that as the number one area that inhibited quality improvement, and we saw this area contributing significantly to quality deficiencies in the Public Health System.

The recommended actions in that report as it relates to population health metrics and IT was to improve methods and analytical capacity to disseminate data that can be translated into actionable information and positive outcomes in population health at the local, state, and national levels. And this was done with the consensus of state and local public health as well because they participated in that project. We also recommended the use of healthcare quality data as a strategy to improve population health, eliminate health inequities, and bridge gaps between healthcare and public health, and we also focused on inequities by addressing the issue of the lack of data for population sub-core groups.

Primarily the reason why the Committee identified this was we definitely saw it as barriers to assessment and surveillance within the system, especially given assessment being a core function of public health, of monitoring and surveillance being identified in numerous IOM reports, and the necessity of having that within the system. Most specifically the IMO report on the future of public health emphasizing the need for regulating systematic collection, and assemblage and analysis of information on the healthcare status of communities.

The consequences of this and are numerous, and I won't read through all of those, but the lack of a uniform method for measuring the health of population from a QI perspective, definitely the lack of standards for public health data and uniform data elements results in systems that lack interoperability and transparency. The inability to sufficiently fulfill certain public health quality aims that were identified in 2008 by the Quality forum, and most importantly, most population health assessments resemble static report card lists of county level data, pre-aggregations of a parsimonious set of indicators, unable to identify why variations often hidden within population subgroups. One of the other important consequences that we saw is that no well-defined consensus definition of the public health roles for data collection and analysis. Not to say that they aren't pockets of organizations that are doing a great job in this but we just saw a lack of a well-defined consensus definition for that.

Some of the missing elements; what was defined as public health intelligence and that is a continuous system-wide interactive process to examine for data relationships to guide quality and provide population health outcomes. One of the other important things that came out was missing this aggregated data that can allow for aggregation to compare outcomes including those of subpopulations. Also the informed use of clinical and healthcare quality data to build better messaging alerts and population-based public health programs as a strategy to improve population health. Some of the more specific missing elements; real-time event or transaction related level data, analytical capacity, and everything associated with that.

I'll read briefly now some recommended objectives that I would like to propose for consideration, and that is within Meaningful Use Stage III. Efficient real-time analysis of existing secondary data, and that could be measured by the ability to do some of the things that I've outlined in A through F such as years of potential life loss, rates of available hospitalization, rates of late-stage breast cancer incidents, rates of obesity, those are just some illustrations on how that could be accomplished.

If you could go to the next slide our recommendation here is to integrate information from an existing EHR and EIH with existing sources of secondary data to complete a quality assurance cycle. That could be measured by the ability to select and identify a geographically defined hot spot with comparatively high rates of deaths, illness, or other conditions; the ability to search and analyze EHR data from primary care physicians and other sources in geographically defined areas, evaluate the quality of certain things such as diabetes management.

And I realize I'm … finish so I'm going through rather quickly; integrate data resources to focus upon specific population problems of interest such as multiple chronic conditions, such as identify a homogeneous subset of very heterogeneous populations to identify those at high-risk for poor outcomes and high costs by—and I list an example of some requirements that could be included such as characterizing patterns of complicating core morbid conditions by applying appropriate approaches as suggested here.

Once again, using breast cancer as an illustration, characterizing certain patterns related to that, and I'm just using breast cancer and multiple chronic conditions as two illustrations here, but being able to identify breast cancer hospitalization using event level hospital discharge data, breast cancer incidence and prevalence using registries.

If we can go to the next slide, and I'm out of time and I knew I would be but I did get feedback from state and local public health and others and the next two slides that you see are some of the suggestions that were provided as feedback to us. They participated in this prioritization process of areas needing quality improvement so their feedback and input to us as we work with others in developing strategies to eliminate these quality decisions was very important to us. I'll end now. Thank you.

Art Davidson – Denver Public Health Department – Director

Thank you. Our next presenter, I believe, is Thomas Land.

Thomas Land – Office of Statistics and Evaluation for the Bureau of Community Health and Prevention at the Massachusetts Department of Public Health – Director

Thank you, Art. You can skip to the next slide please. Before starting I want to say that I'm representing several partner and partner organizations, and they're listed on this slide. Among them Michael Stelmach of Snow Incorporated is in the room with me. He is available to answer any technical questions that arise.

In the next ten minutes my goal is to give you an overview of how healthcare providers currently refer tobacco users to tobacco quit lines, how referral to quit lines relate to Stage I and II Meaningful Use, how referrals might be linked to Stage III measures, and finally, I will recommend a public domain approach to quit line referrals as well as the barriers ahead and the potential impact of the successful implementation.

In fiscal year '10 quit lines reached approximately 409,000 tobacco users in the United States; 28% of these tobacco users were referred by fax through the healthcare system. Fax referral systems were developed ten years ago to give providers a consistent resource for referring patient who use tobacco for counseling.

All 50 states have tobacco quit lines. The quit lines offer advice, counseling, coaching, tips, educational material, and in some cases medication to help tobacco users quite. They are run by state Departments of Health and area supported by the federal government. All quit lines receive referrals from providers and all quit lines have electronic platforms of some sort to capture and store data about tobacco users, but in 2010 no referrals to quit lines were made electronically. Today, less than 1% of referrals nationally are fully electronic.

Electronic referrals from quit lines can meet a number of State I and II Meaningful Use objectives as listed on this slide. The U.S. Public Health Service Political Guidelines for treating tobacco use and dependence assigns a grade of A for quit lines for strength of evidence. It is possible that Stage III Meaningful Use measures may simply increase the thresholds from Stage II. However, it is also possible to measure more complex behavioral changes in health improvement of highly effective treatments like referrals to quit lines. Current work using large real world data sets from public and private health systems in Massachusetts and Louisiana are already demonstrating this possibility.

There are three primary sites to referral options available to providers; paper-based or faxed, e-form which uses email or pre-populated PDFs, and finally, fully electronic e-referrals. While there is significant interest amongst Stage II links there are quit lines electronically to providers a universal technical solution is lacking. Our experience in Massachusetts suggests that health systems will turn away from paper-based faxed referral systems as more and more systems adopt EMI.

We also know there's a great deal of confusion in the quit line world about the term electronic. Some would describe fax referrals as electronic since a fax transmission of data is itself electronic. However, the use of electronic describes the process where the initial referral is made through and EMR, the referral populates a quit line database automatically, and any communication back to the provider from the quit line populates that patient's electronic health record. The slide presented here is offered for informational purposed, and is too detailed to cover in such a short presentation.

Massachusetts and New Hampshire have successfully implemented an electronic referral program which we believe models … domain solution for all quit lines and for any health system with an EMR. Two health systems in two different states with two different EMRs—Epic and GE Centricity—have adopted this model and are exchanging data already; more on these health systems in a minute. Health-e-link operated by John Snow, Incorporated provides secure HIPAA complaint data transmission. As designed it serves as a universal translator between EMRs and quit lines. The sender and receiver would determine the order and the format of the information transmitted. The formats do not have to be the same nor does the sender even have to be aware of the receiver's technical specifications and vice versa.

Without a public domain approach we will be entering a world in which communications between health systems and quit lines would have to be hard coded. For all but a few the work would be prohibitively expensive. This public domain approach is therefore vendor agnostic. The link in the middle can serve any EMR type and any state quit line. Furthermore choices of product on either side of the equation would not have to be permanent. Health systems could switch from one EMR product to another without re-writing code or dropping their e-referral option. Likewise, state quit lines could switch vendors without interrupting the flow of referrals.

This slide shows an example of the impact on electronic referrals on a health system. Atrius Health in Massachusetts with a patient population of about 700,000 launched an e-referral system through its … EMR in October 2010. Referrals doubled almost immediately. Further studies of Atrius patient population are showing production in smoking and improvements in patients' health. Community Health Access Network of New Hampshire, a network of community-based health centers, also uses health-e-link. Here too referrals doubled.

Moving this work forward is not simple and there are certainly barriers. First, we must find the funding for a public domain solution linking health systems to state tobacco quit lines. TA will be required to support the new technology base. Quit lines will need additional funding to meet the cost of responding to increased referrals. State Departments of Health must work with EMR vendors to facilitate this change, although many states will already have that capacity. Without all this, e-referrals are unlikely to advance while fax referrals are likely to be phased out. Tailored solutions that serve unique EMR quit line combinations are simply too expensive.

The potential impact is large. Referrals to quit lines would likely increase. Tobacco users would quit in greater numbers, and smoking related illnesses would decrease over time. The goal of a Million Hearts campaign would also be obtainable as heart disease would be more obtainable as heart disease is the first smoking related diagnosis to show improvement following cessation. But the impact of this public domain solution is both broader and deeper. It is broader because the state models can be used for many types of referrals whether they are for obesity services to chronic disease self-management programs to virtually any community related service. Moreover, clinical to community linkages are at the heart of the CDC's community transformation grants.

The potential impact is also deeper because the data developed from these referrals can be used to demonstrate reductions in risky behaviors like smoking and it can be used to show specific and measurable improvements in patients' health. Finally, this data can help quantify saving from healthcare costs averted. This last potential impact embodies the longest range vision of meaningful use where provider performance is measured in terms of patient population health and the costs saved by society.

Thank you.

Art Davidson – Denver Public Health Department – Director

Thank you, Tom. I think we're keeping up in time here. We're doing pretty well, I believe Michelle, and we'll move on to the next presenter who's Gillian Haney.

Gillian Haney – Massachusetts Department of Public Health – Director of the Office of Integrated Surveillance and Informatics Services

Good morning, everybody. Thanks for the opportunity to present here today. I'm going to be talking specifically about two projects that we have been working on for the last several years; our electronic laboratory reporting initiative, as well as electronic healthcare reporting.

I think it's always helpful when describing some of these projects is to look at the infrastructure that is actually supporting them, and several years ago in Massachusetts we really tried to look forward to the future to see what we would need so that would be sustainable, and so we developed an infrastructure that would support both ELR as well as EHR, and (this is for notifiable disease reporting) to ensure that we had a system that would be able to receive and process these reports.

Currently in Massachusetts our ELR infrastructure was certified to meet Meaningful Use Stage I requirements, just a couple of months ago. We embarked on this initiative in 2005 and as of last week we've got 66 clinical laboratories that are in production and two commercial laboratories sending us data on over 85 notifiable conditions including sensitivity data as well, and we also accept lead reports. Last year we processed over 1.3 million individual laboratory results that were triaged through MAVEN for case investigation and follow up, and, again, it's important to note that this is the same infrastructure that supports our electronic health record reporting initiative.

This is an example of the raw data that is actually consumed by the system, and we established a mapping portal that is designed to take local codes and map them to specific LOINC and SNOMEDs which then we can interpret easily by our surveillance system. This slide here shows how we take antibiotic resistance data in to the system whereby we actually document LOINC and SNOMED for every antibiotic as well as method and take also the local description if we need to go back through for data quality purposes.

This data are then sent by and HL7 message either 231 or 251 to our MAVEN Disease Surveillance System and this demonstrates exactly what it looks like in the system. We can do raw data extracts to pull the data out that is then used for analysis by our epidemiologists as well as flag any information that we need for follow-up. If we have a suspect visa or versa case that actually gets flagged for immediate response by our epidemiologist.

In terms of some of the analyses that we're able to do for antibiotic resistance, we're looking at statewide incidence of invasive MSRA. We're combining our electronic laboratory reporting data with hospital discharge data. We've also recently embarked on a project to look at …; again, we're also using the hospital discharge data. I think it's important to note that there is significant redundancy in recording, and while we're able to consume all of that data that is coming through ELR there is a significant amount of data cleaning that has to be done in order to make this data interpretable.

We all thought that ELR was going to be quite … in terms of public health, but what we found is that we were missing significant demographic information as well as we didn't have the fuller piece of the information in order to do our case investigation follow-up. And so we partnershiped with Harvard Medical School under Rich Platt's direction through funding through one of CDC's Center's for Excellence and Informatics to develop the enhanced support for public health practice project, ESP, which is an electronic system that was designed to mine electronic health records for specific information related to notifiable diseases, and then support that data to the health department using this same infrastructure that is used for electronic laboratory reporting.

It's important to note that one of the beauties of this project is that the ESP server, which is used to mine the data as well as submit it to the health department, can sit on top of any electronic medical record system.

The goal of this project was to combine really the best of traditional clinician initiatives reporting with the electronic laboratory reporting system so that we would have automated disease detection and reporting from electronic health records. It needed to be fast, accurate, clinically detailed, and also generalizable.

What we found is that in addition to the basic patient demographic, order and provider information, primary provider information, and contact information, as well as some basic laboratory information, we were also getting key clinical information to support our follow-up such as treatment information; symptom data that was based on ICD-9 codes; pregnancy status as appropriate; and then, also vaccine history. What we found is that for a significant number of conditions that were being reported to us this supplemental information resulted in us not having to actually go back to the provider unless we saw that there was something that was inappropriate.

The case logic that was developed by Dr. Platt's team was based on surveillance case definitions, and then was modeled so recorded data was captured by the EMR. We had a range in terms of the condition algorithms that were developed from simple laboratory-based definitions. For example, chlamydia and gonorrhea, to those that had more complex laboratory conditions such as positive and negative results, as well as ALT and ASTs to identify a few cases of hepatitis C, and then, those notifiable conditions such as TB that both needed clinical diagnostic information as well as possible laboratory information.

When we went back and we actually looked and validated the data what we found, as illustrated on this slide, is that there was a significant increase in both the number of reports that were being reported to the health department through ESP as well as the supplemental information, and this demonstrated that algorithms that were developed were very sensitive and very specific for us.

These data are, again, sent through using an HL7 message through our ELR infrastructure, and then actually end up in our MAVEN Disease Surveillance Case Management system to support case investigations and follow-up.

In terms of our current status with the ESP project, it is in production for a large medical organization covering approximately 10% of the population in Massachusetts. We are about to go live with an additional three hospital sites; that should happen over the next month or so as well. We are really looking to expand the number of algorithms that we can use to detect infectious diseases. Currently we have seven but because of reduced funding we were limited in our ability to continue with that effort, and so we would really like to explore ways that we could expand that number as well as for additional reporting sites.

I think in summary, as far as infectious disease reporting in Massachusetts is concerned, we've had, I think, great successes for electronic laboratory reporting but we all know that is actually limited in terms of some of the clinical and epidemiologic information that we need to support public health. We do have the infrastructure that's in place to support health information exchange for notifiable diseases, and we really want to start exploring around how electronic health records will support additional case reporting. We have some concerns that the information that's held in the electronic health record may be limited as far as actual public health is concerned, in terms of risk factor information and that type of data, but we're looking forward to see how that will pan out. Massachusetts has also recommended that notifiable disease reporting actually be included as part of the Meaningful Use requirements in Stage II.

That's what I have. Thank you.

Art Davidson – Denver Public Health Department – Director

Thank you, Gillian. We'll continue on with the presentations from Massachusetts. You've already referred to the work of Dr. Platt, and we'll move on to his presentation at this time. Rich?

Richard Platt – Harvard Medical School

Thanks. So I'm continuing a theme that Gillian has already started and would like to talk about using the same kind of platform (this ESP platform) to do population health surveillance. This is a work example of a query system that we've developed with our partners at the Mass Department of Public Health using support from the CDC Center of Excellence in Public Health Informatics to allow an authorized public health person to do rapid interactive queries to be able to assess the burden of diabetes.

This is a HIE map showing the prevalence of diabetes—his comes from the Atrius practice that was mentioned earlier—about 700,000 individuals in Massachusetts. The visualization tool is called the Riskscape. That's one of the tools we've developed through the Center of Excellence funding, and it allows rapid use of data that's updated every day.

In addition to this overall prevalence, it's possible to stratify showing the age, race, sex of BMI distribution in the entire patient population. This slide show that diabetes is most prevalent in Blacks and that it's about equally prevalent in Asians and Hispanics. Here you can see (maybe no surprise) that diabetes is most prevalent among people with BMI over 30. It's also possible to look at the population of individuals who have type 2 diabetes. As shown here, you can see that in this data 38% of people are not Caucasian. This shows that about half the people who have type 2 diabetes have a body mass index over 30.

It's also possible to evaluate how these same populations of patients who have type 2 diabetes are doing with regard to clinical care targets. You see that 57% here have hypertension, and that just over half have … hemoglobin concentration above 6.5. Also, to focus down on the specific zip code in the entire … area. This slide show that in the target zip code the prevalence of diabetes is—that the obese people in this zip code have a higher prevalence of diabetes than do comparably obese people in the rest of Massachusetts. And here you can see that the hypertensive people in this zip code have a higher prevalence of diabetes compared to others with hypertension in Massachusetts.

Let me now back up and explain where this comes from. Fortunately, Gillian introduced the ESP platform that we developed and I'll just say a couple of extra words, which is that this is open sourced software that we developed that can work with any modern EHR system. It does this by extracting data every day from the EHR system so that the work we do doesn't burden the clinical system, and then the data elements that are necessary for the conditions that we're monitoring are transformed into a standard format that can then be the target of algorithms that do the kind of notifiable disease surveillance that Gillian talked about or that can then be the target of the kinds of queries that we described. It's important to note that these data are controlled by the practice so although they contain PHI these are data that are under the complete control of the practice that created them.

Case identification is done using algorithms that use the data as Gillian described. I'll just say that for a number of the criteria, the conditions that are of interest there is not yet a standard definition that applies equally well across all practices, and so a substantial piece of the work we've done with the Department of Public Health has been to develop and then validate algorithms for making the diagnosis. This is the algorithm for diabetes; any one of these … tests, any one of these with the diagnoses criteria or any one of these descriptions. Having made that diagnosis it's still important to distinguish type 1 from type 2 diabetes, and so the criteria we're using here are to classify as type 1 as the individual meets any of these five criteria but otherwise it's type 2.

I'll just mention that an additional use for these kinds of data is syndromic surveillance. For the past four years we've been providing weekly reports to the Department of Public Health influenza-like illness. These data are part of the state's report to the CDC. I believe this is the largest single component of the reporting but it is done because these reports are generated automatically from every primary care practice in this large multi-specialty group practice that occurs every week of the year. It requires no incremental work.

The direction in which we're going: Now, the data that I've show are all from independent practices and if you wanted to obtain the kinds of population level reports that I showed in the initial example you'd have to query each practice individually. The work we're doing now is to create the capabilities to do distributive querying of multiple practices or HIEs. We're doing that with a project called MDPHnet that's reported by the Office of the National Coordinator, and we're building on the work that is being done by the Query Health program.

I borrowed a couple of slides from a recent Query Health presentation to show that the general strategy of these distributive queries is to have queries go to a policy enablement layer that distributes queries to multiple sites that have accessible data, and that layer that we're using is called PopMedNet, which our group developed with support from AHRQ and the FDA. Our goals is within a relatively short period of time to be able to do the kind of querying I described above where queries would go to multiple organizations that have appropriate data, and with the permission of the practice the queries would execute and then aggregated data over all of the practice would be returned.

There's a working example of this kind of distributive querying mechanism that we're using for the FDA's Mini-Sentinel program. This is a distributive network that has 17 different data organizations shown on this slide, and the database currently has data for 126 million individuals and billions of dispensing that is occurring. I'll see if I can have time to show you a work example.

The FDA asked us to help it follow-up on the spontaneous report signal of an excess number of celiac disease cases among patients who are users of a class of drugs to treat high blood pressure, angiotensin receptor blockers. And so within a couple of weeks we were able to report on the outcome of over half a million new users of anti-hypertensive drugs, and what you can see is the drug that had caused them to be concerned was olmesartan. What this data shows is you can rapidly get an idea of whether there seems to be an unusual occurrence of these conditions among olmesartan users, and the answer appears to be no. This is a new capability that uses distributive querying of the kind of the query helps us … designed to support.

In conclusion, I'd say there are tools and capabilities now to use electronic health data both for predefined meaningful use measurers and also for a wide array of ad hoc analyses that might arise in the public health arena. Finally, it's quite clear to us on the base of the experience that we have that the distributive querying approach where one sends questions to the data has great merit. It both protects individual privacy and it lowers institutional barriers to participation.

Thanks very much.

Art Davidson – Denver Public Health Department – Director

Thank you, Rich. Continuing with the theme from Massachusetts, we'll now move on to Julia Gunn. I think we're doing pretty well for time here. Julia, are you there?

Julia Gunn – Boston Public Health Commission's Communicable Disease Control Division – Director

Yes, I am.

Art Davidson – Denver Public Health Department – Director

Thank you. Please proceed.

Julia Gunn – Boston Public Health Commission's Communicable Disease Control Division – Director

Building on our experience with syndromic surveillance from emergency room departments in Boston, the Boston Public Health Commission is evaluating that type of a model for ambulatory care, syndromic surveillance, with a particular focus on chronic diseases.

A little bit of background is that the City Health Department has been expanding our capacity particularly around health inequity, and there are reporting requirements in the city by health care institutions that provide us with detail of demographic information about persons seeking healthcare in Boston. And we're particularly looking at childhood asthma, diabetes, obesity, and other chronic conditions that appear to disproportionately affect segments of our population. To do this we're receiving samples of visits to community health centers collecting and evaluating demographics, chief complaint visits, vital signs, and hemoglobin A1C results. We're looking for accuracy, validity, and timeliness.

From an infectious disease standpoint we're also asking the question about added value. For example, if you take the example of influenza-like illness we have multiple data sources already we're looking at; so we have case reports, FluNet, emergency room departments' syndromic surveillance, Twitter, Face, Google flu trends. What is the added value that has helped us and what other piece of information that we may not be seeing right now can help answer those questions?

From a chronic disease standpoint our question becomes what is our response here at the City Health Department, so if it's to provide services it may require a disease registry. For example, for childhood asthma, this would have a different reporting requirement than for aggregate information that would be informing the community or response planning. All of this becomes critical as we think about data in a holistic manner. We have multiple data strings that we access routinely here in the City and a very good example is the electronic trip sheets from Boston EMS that actually give us information before somebody becomes in a healthcare setting and provides more of a contextual understanding.

What are the minimum data sets we need to develop in terms of these various response types? Again, we're seeing the need for business process alignment. Clinical care is often different from public health; the risk factors may not be there. They may not align with public health, and so we have to be mindful that providers only have about 10 minutes, maybe even less, to go through a list of quality care indicators and the patients need to manage their conditions, and that our information will then need to be obtained in other methods.

We also have to think about the likelihood of change in health care settings. One of the very good examples of this is as part of this process the City Health Department asked providers to indicate illnesses; nobody checked it but if you address this there is lots of people who are reporting living in shelters that are presenting to healthcare institutions, and, again, defining visits. What's an asthma visit? Are we looking for a visit to a specialist, a visit to your provider because you have a problem with your asthma or diabetes or is it a well visit and you also have well-controlled asthma and diabetes? What's the problem? What's our focus and what can it tell us?

We are also looking at data quality. There are lots of data quality issues here. There are technical ones around transmission; procedural, what the problem is; they're not well-maintained; and it is also unclear how their managed in terms of if we wanted to know if it's a new problem. Is it new to the provider? Is it new to the patient? Is it new to the facility? All of these need to be thought about as we're thinking about what is the query here. And then, there are practice issues. For example, in our TB clinic everyone who first presents has a chief complaint of rule out TB. Does that tell you about TB in Boston? Absolutely not.

This is an example of an analysis that was done by Dr. … from the CDC and it's looking at measured temperature versus self-reported fever, and so people thought well, we'll get the measured temperature and be so much better. But, in fact, I'll call your attention to over 100,000 recorders where people said that they had a fever but the temperature was not elevated and that likely results, in many situations, from the use of antipyretics which are not routinely captured.

What are the barriers? We'll mention this and get it out of the way, funding. Also for electronic laboratory reporting particularly when you get in to conditions like hemoglobin A1C depending on your needs; how you begin to think about this in terms of demographics and clinical indicators, what the processes are and how best to utilize this information. Race/ethnicity is a particularly important variable that we have found, and we have great use for this. We've seen this over and over again in our ED syndromic surveillance, but what we're seeing is a shift and many people are reporting 'other' race. And when you look at the ethnicity it's Cape Verdean or Haitian, when you're thinking about a public health response and management that is critical information to have because it tells you about language and information and cultural practices that may not be captured in other ways.

We see a wide variety in the maturity of EMR systems. We have new systems. We have systems that have been in place for a long time. All of this has implications in terms of technical infrastructure and clinical practice. And then, for chronic disease surveillance you need to understand better the metrics that public health will be using and the managed follow-up care date, public health information systems to process this, and response roles. What information is needed by whom to do what? Different levels, for example the provider versus the state or the federal level versus CBOs versus local health departments all have different response roles. We need to think about that as we're designing systems to provide information that is most critical for people who can do something about the problem.

Infrastructure needs: Data quality metrics: As these systems move forward in Meaningful use critical areas to begin to think about, we need policies, automated systems really looking at data quality as part of this process. And from the public health surveillance side we need metrics and systems for chronic disease. Infrastructure … workflow this will be a different kind of epidemiology and do we have the workforce and what kind of training are they going to need to begin to use this data in a meaningful way? What the minimum data set, data definitions? Recommendations: Pilot projects would be really helpful moving forward; use cases; experience in multiple settings so the high-end users and mature systems; and people that are at the floor and maybe even the subfloor the use of electronic HIT medical information systems; and finally, the workforce training.

The impact: We're looking for targeted systems for chronic disease surveillance at a lower cost that will give us the information to do something about problems, information systems for response beyond the healthcare sector. Many systems and many issues require intervention, for example, urban design, and public safety. We can say to people you should walk, you should eat healthier, but when you actually go and look at the environments in which they're living the infrastructure isn't there or there are issues about safety. And so how we begin to link what we're seeing in healthcare with other data sources, local GIS mapping, police reports, EMS data, school data. All of this will give us a more holistic view of targeted intervention in the hot zone. Public policy: For example, banning soda sells in Boston schools very important in moving some of the efforts that the City is doing around obesity, engaging community leaders, faith-based. There are so many other consumers of healthcare information that need to be included as we begin to design systems so the data resonates with people that can do something about the problem.

Finally, as we go through this process we currently have systems. We have the risk factor surveys. We have some of the work that's being done and so maybe the added value of the ambulatory care syndromic surveillance may not justify the cost at this point in time, and we may need to look forward and sort of honing our other strategies and thinking about information and other ways before we embark on a very expensive project that may not have the added value. Thank you.

Art Davidson – Denver Public Health Department – Director

Thank you, Julian. Our last presenter this morning is Jim Buehler, and then, we'll have time for comments and questions from the workgroup. Jim?

Jim Buehler – Centers for Disease Control – Public Health Surveillance Program Office – Director

Thanks very much, Art. My comments will build on those provided by my colleague Dr. Seth Foley in a previous session as part of this series and I think you will see that many of my comments will also echo and build on the themes that we've heard from several of the other speakers.

First, what are we working on that can help inform Stage III? Before I address that question head-on I'd just like to back up a bit and provide some background information. I've been asked to focus on public health surveillance, which is really meeting a need for information. People who are responsible for programs to prevent or control diseases and other adverse health events need ongoing information about those conditions in the populations they serve, and broadly speaking we call that process 'public health surveillance'. There are lots of different ways of doing that and today I'm going to focus mainly on the case reporting model. The paradigm of that is notifiable disease surveillance. Reporting of conditions, diseases that are mandated under state laws and that typically follows the cascade from healthcare providers (including clinical laboratories) to local health departments to state health departments, and then, under agreements between states and CDC; some of that information is shared at the national level with CDC to develop a national picture.

We have a system to support that that generally provides the routine or core information. In theory it has the capacity to add additional disease specific information as well and that happens in practice in some instances. In addition to that routine core system it's also supplemented by a variety of parallel systems that provide more focal or more detailed information such as the PulseNet system for monitoring the DNA fingerprint of certain pathogens that's managed mainly through specimens that are referred to public health labs and have been critical in detecting multi-state outbreaks that are associated with a particular strain of bacterial infection.

Another is the emerging infectious program which compliments routine surveillance by focusing much more intensive and active surveillance in selected geographic areas that allows for collection of additional information to provide much deeper understanding of the epidemiology of different conditions. And in many instances programs have opted rather than to tag on to the core system to develop parallel disease specific systems as well.

From the perspective of states this has led to concern about the proliferation in parallel systems and the state has to be concerned not only with the disease specific concerns but also the crosscutting or common aspects of surveillance practice. Whereas from the perspective of CDC programs quite understandably they feel a need for systems that are responsive and allow them to be accountable for their funding streams to meet their particular program objectives. A big challenge for us is how we balance the categorical and crosscutting perspectives.

In addition, the Meaningful Use effort comes on top of longstanding prior efforts. As referred from others the investments over the past ten or fifteen years in developing immunization registries or immunization information systems; development of electronic laboratory reporting, which provides one piece of an infectious disease report; as well as systems to support reporting from clinical to public health labs and back and forth. The development and reporting and information exchange standards for electronic messages for case reports; investments in syndromic surveillance that form a surveillance that depends heavily on automation; the transition from the original form of BioSense to BioSense 2.0, which uses cloud technology and was developed … with syndromic surveillance being part of Phase I Meaningful Use; and the development, in theory at least, of the capacity for that cloud based approach to provide a catcher's mitt that could be used for other forms of surveillance. As Dr. Platt mentioned our work to support the centers of excellence, and as Dr. Foley has mentioned, our work with the joint public health informatics task force, which represents a variety of state organizations and local organizations, and our participation specifically with respect to Stage III and the standards of interoperability framework discussions.

What barriers have we faced? Well, as others have alluded to this is not a great time for state and local health departments to be taking on expanded roles given their budget situations. As we've heard one state health officer say, "This is the greatest opportunity for public health coming at the worst possible time when state and local public health infrastructures are strained." And we see this mirrored in the metaphors we've heard that use—a couple years ago metaphor was the train's leaving the station. More recently that evolved to there's a tsunami coming and now we're drinking from a fire hose.

As we head from the public health panelists to this forum as we anticipated Stage II a year or so ago local and state health departments have voiced concerns that they felt lack of support to be an effective partner and to really hold up their end of the deal to fulfill their end of the Meaningful Use handshake, and to meet their end of the bargain to ensure that the population health objectives for Meaningful Use are fulfilled.

Other barriers may not be barriers so much as risks. One principle of surveillance is that we collect information we need and demonstrate its utility, and the imperatives to the Meaningful Use timeline has forced public health to be focused on supporting the development of the receiving capacity and the certification for physicians to get their incentive payments, but that means we've been able to put less attention on ensuring our capacity to actually use that expanded information. And there's a danger that if we are perceived as collecting information that we can't use then there's a risk of breeding cynicism about information sharing with public health.

Another challenge is that we're working in a new culture and I think this is exemplified by the standards of the interoperability discussions surrounding the development of case reporting criteria that might be considered in Stage III of Meaningful Use. In the past a conversation like this is a conversation that would have originated within public health and to the extent that it concerned information sharing at the national level and followed the negotiation between state epidemiologists and the CDC. In the new SNI arena where decisions are being made regarding a development of proposals for case reporting capacities in Stage III for EHRs, much of that conversation is occurring in a setting with a much larger cast of characters that are not familiar to public health, and state and local public health people at times feel like the conversations about these activities are being held in an environment that they don't entirely understand. We've heard questions about whether it's important to be involved. I think we see now that there's a recognition that it's important to be involved, that a process for how this is going to unfold may not be fully understood. There are concerns that the process is moving very quickly and yet there is limited capacity to be involved, and that many of the conversations use very highly technical terms. These are not bad things. These are actually good that many more people are involved but it's a new world that state and local partners of ours need to understand and be better supported to be a part of.

Another concern has been the focus on what we are ready to do as opposed to what our priority to do is, and I think that's characteristic of the current evolution of the case reporting scenarios. Those use cases that may be the ones that are ready to go may not necessarily be the ones that the public health community would view as a priority. So there's a readiness and priority gap we need to close and we need to make sure that we're hearing from those that are the intended recipients of this information. I think there's also variable recognition of the importance of Meaningful Use. Clearly the state and local health departments that are on the frontlines see the urgency but for CDC programs there's a variable appreciation depending on how close they are to specific activities, whether they're responsible for programs that have been touched directly by Stages I and II or whether the tsunami for them is a little further off shore. In that case there tends to be a mix of enthusiasm and skepticism coming from concerns that they've heard promises about the transformative effects of technology has the potential for that in the past that have not been fulfilled.

In terms of what infrastructure is needed, I would say that the answer is easy. We just make everybody like Massachusetts, but that's going to be easier said than done. We've heard a story from a state that's really in the leadership of vanguard but not everyone's at that point. Clearly one of the biggest impacts of Meaningful Use is going to be on standards development and that's going to require a very highly effective marriage of the epidemiologic and information technology perspectives bridged by expertise in informatics, and we must make that bridge an effective bridge that will enable but also potentially constrain, as others have mentioned, public health access to clinical information that we need for public health surveillance.

I'd say most importantly we need an evaluation capacity that really lets us understand where we're at with this unfolding story. Is Meaningful Use on track to meet the population health objectives? What is our current situation? How well are health departments doing? Not just are we able to receive and validate messages in one format or another or exchange them using one standard or another or provide certifications to physicians to get their incentive payment but is it actually strengthening the partnership between public health and the clinical world? Is public health surveillance getting stronger? Can we prevent control diseases better? And we need much more work like what we've heard from our colleagues in Massachusetts today. We need a public health workforce that really has the capacity to use and act upon this expanded information and the analytic tools that make it easier for this information to be used and analyzed. And so there's … need to better engage the side of the public health that involves surveys such as the behavioral risk factor surveillance system, and continue to expand joint consideration of clinical quality and measures particularly for chronic disease and how they intersect with public health objectives as Dr. Platt has mentioned.

The last question is what is the impact of these activities and the cost and economic savings? From the perspective of public health and particularly the impact on state and local health departments and our partnership with them I'd say it's too early to tell, and I'm not sure we have infrastructure to answer those questions, but we have to develop that infrastructure. We've heard stories about successes and models. I'd caution against saying let's just do everywhere what was done in Massachusetts but rather let's look at the Massachusetts model. Let's look at other models. Let's understand them. Let's test and evaluate them to see how we can make this work effectively for public health. Thank you.

Art Davidson – Denver Public Health Department – Director

Thank you, Jim, and thank you all for your thoughtful comments this morning so far. I think what we'll do now is we'll open up for some questions from the subgroup. Anybody who would like to lead it off? Well, if there are no initial questions here from the rest of my subgroup members I'll go ahead and ask the first question. This one I'd like to ask of Tom Land. When you designed that system with JSI and now propose this public domain e-link model what is the sort of content of the message that's going and what are the capacities of the EHRs that are sending the message? Are they using HL7 messaging? Are they using a CDA? Can you describe a little bit more about what it is that's being sent to the quite line and what is being sent back to the EHR?

Thomas Land – Office of Statistics and Evaluation for the Bureau of Community Health and Prevention at the Massachusetts Department of Public Health – Director

I could give you and answer that would be incomplete but I'm going to pass that to Michael Stelmach from JSI who's here to answer technical questions exactly like that.

Michael Stelmach – John Snow, Inc.

Good morning. I'll answer the question specifically in the context of the quite line e-referrals. We have the referrals coming from the EMR system containing patient demographics as well as provider identifying information as well as the referral information with their quit status and some other quit line related content to help the quit line staff do their jobs when they engage the clients during the smoking cessation cycle or process. The messages that are being sent are in a variety of formats; HL7 but also proprietary formats and message structures such as Excel spreadsheets and even text files. Similarly on the return trip when the e-referral update is made in a matter of couple weeks or months HL7 or proprietary format and messages, again, the patient identifier and provider identifier information as well as the smoking cessation status of the patient.

Art Davidson – Denver Public Health Department – Director

Thank you. So when you suggest that a public domain e-link would be available at some point are you saying, Tom, that you would be still supporting all these proprietary solutions or are we talking about some standard?

Thomas Land – Office of Statistics and Evaluation for the Bureau of Community Health and Prevention at the Massachusetts Department of Public Health – Director

Well, I think we may gradually drift toward some standard but I think the variety of messaging actually is embodied in the health-e-link or the public domain e-link methodology that's described. You can handle all of those and so I think we might restrict that over time to a certain extent but I think what is shown in both the Massachusetts and New Hampshire example is that variety is possible.

Amy Zimmerman – Rhode Island Department of Health & Human Services

This is Amy. I jumped on a little bit late but I did hear all of that presentation. I actually had a question with how that sort of relates to direct or not or is it because something goes back from the e-link system back to the medical record. It just seems like—I don't know if that's what you were getting at but I had a question and how does that relate to direct if it does at all?

Thomas Land - Director of the Office of Statistics and Evaluation

I guess I'm not sure what your question is. What do you mean by the word 'direct'?

Amy Zimmerman – Rhode Island Department of Health & Human Services

Yeah, I didn't think so. The direct messaging standard that ONC—the sort of secure email messaging standard that ONC has sort of really gotten behind and the number states are doing for sort of similar types of referrals, point-to-point type of messaging under a more like secure transport-type method.

Michael Stelmach – John Snow, Inc.

It's Michael Stelmach, again. I apologize; I can't speak to that standard not having used it directly. I will say that we have a network established that can support point-to-point or system-to-system data exchange; however, all of our current implementations are batch level data exchange where the referrals come to us in batch files so we haven't implemented that standard. Again, to that point of standards it'd be the consensus that we're trying to build with the message content and structures are intended to promote standards so that things become more consistent and a lot more widely implementable. However, we're balancing that with embracing the current capabilities of these EMR systems, quit line systems using this middle where this data translator we call Health-e-Link so that people can adopt the data exchange model for the quit line with minimum burden. So promoting standards would be adopt the proprietary nature of a lot of these system capabilities as they exist today.

Charlene Underwood – Siemens Medical – Director, Government & Industry Affairs

This is Charlene. To add on to that, just on the same topic has there been use of patient generated data in this project at all? It seems like this would be a great opportunity for patient engagement. Have those discussions occurred and any discussions around standards as you thought it through?

Thomas Land - Director of the Office of Statistics and Evaluation

We've thought about that but there hasn't been, to this point, been information about patient engagement or standards that have been developed.

Charlene Underwood – Siemens Medical – Director, Government & Industry Affairs

You know the e-referral thing and all that would seem to fit into that.

Thomas Land - Director of the Office of Statistics and Evaluation

I agree and I think that's what I was trying to convey in broader and deeper part of the presentation is that I think there are great possibilities with this … generalized approach.

Art Davidson – Denver Public Health Department – Director

Any other questions from the committee?

George Hripcsak – Columbia University Dept. of Biomedical Informatics – Chair

This is George. It's kind of an odd question; I'm just realizing I'm hearing these great talks but I'm not sure what the final goal—like what this looks like in ten years. Listening to Peggy's talk with the great, very exciting objectives that she identified and Julia kind of looking at what the cost benefit is, and then, Jim, you know, the CDC view, and so what are we going to have? Is it the CDC monitoring the health of a population? Yes, that's part of its job. Is it the local health department saying, "Okay. Here's how we're doing" or is it more helping the healthcare system that is the commercial healthcare industry kind of monitoring the health of the public kind of the way Kysar or Geisinger would be expected to do that in their local regions?

I know that everyone—we're trying to create the infrastructure so that regardless of the answer to the question anyone can get to it, but still I'm trying to figure out who is the eventual target of this thing that is going to be responsible for monitoring the quality and acting on it?

Jim Buehler – Centers for Disease Control – Public Health Surveillance Program Office – Director

This is Jim Buehler. Let me take a stab at that. I'm sure others would like to add as well. I think you can see it as a natural kinship between the prospected that an individual provider whether he or she is in solo practice, in a small practice, or whether they're a big healthcare system like some of those that you mentions, that they take care of a population of patients and there's value in using these tools not only to improve the care of individual patients but also to understand the health of the population, at least the population that they see coming through their door and/or the people that are enrolled in their systems so that they can see how well they are doing in providing services to that population.

That's not a very different way of thinking about things from the prospective of a county health officer or state health officer that's trying to understand the health of the population that he or she serves. The point I would make is that taking that population perspective regardless of how you define a population there's a kinship there, and there's always been a relationship between healthcare and public health. That's nothing new so I would say that one of the goals of this effort ought to really be to strengthen those so that public health gets information it needs but is also providing back to the clinicians information they need so that they can better understand what's going on with a patient in front of them. It might be shaped by what's going on more broadly in the community, and then, at our level, at the national level we need to be able to paint a regional or national picture.

I'd say the answer to your question is all of the above. We have to think about how the pieces fit together.

Peggy Honoré – Office of Healthcare Quality, Office of the Assistant Secretary for Health – Director, Public Health System, Finance, and Quality Program

This is Peggy. I would totally agree with Jim and his comments. I don't know if it's possible or if you would even want to assign individual responsibility for monitoring the health of the population. There are all of these pieces that need to fit together and as Jim illustrated and as I talked about in my presentation and also some of the topics that Julia hit on also. It's the marriage between the clinical data, the public health data, the sharing of the data. How that clinical data can be funneled with public health, and then, public health do an analysis of that data to see the analysis back to the providers.

I think sometimes when you're at the federal level it's not clear to see what actually happens at the state or local level, and I think this draws upon what needs to be happening at the state level in order to inform the federal level perhaps.

George Hripcsak – Columbia University Dept. of Biomedical Informatics – Chair

This is George. So this is good. I mean, actually just from what you just said now I'm realizing this could be very exciting. I mean, the individual doc should be part of public health. It seems like the standard way of looking at it is okay. The data goes to public health department, the public health department knows that it …, the health department sends information back to the care provider so when they see a patient who could be part of that outbreak they can send the information back to public health and treat the patient appropriately. But maybe this thing can get— with social media this thing can get more distributed than we realize and that the individual care providers take on even more of a public health role and that the public health department takes on, in some ways, more of a care role. I think that our current model may shift over time because of technology and it may become more ambiguous.

Gillian Haney – Massachusetts Department of Public Health – Director of the Office of Integrated Surveillance and Informatics Services

This is Gillian in Massachusetts, and I just want to comment on that. I think one of the things that we'd like to try to do is try to relieve the burden of reporting information and infectious diseases that can help us assess the overall status of infectious disease, but at the same time really support and then help them focus on doing follow-up measures where there are real means of public health importance, so the Lyme disease, the routine STDs where we don't actually have to follow-up on every single case if we can be certain that the patient is being treated and have the provider actually focus more on in terms of like preventing follow-up of … cases or measles or so on and so forth.

Julia Gunn – Boston Public Health Commission's Communicable Disease Control Division – Director

This is Julia Gunn, and I think we have a really interesting project and work that we're doing here in Boston that make get at some of this. In the City Health Department has built a coalition around bicycling and bicycle accidents. To improve the obesity problems and get people moving more we're encouraging more bicycling but the more you bicycle— they're also looking at where the accident's happening. We're using syndromic surveillance and with the help of the CDC and Dr. … we've done a project where we now better understand how to utilize syndromic surveillance data to address bicycling accidents, and it tells us about who the people are. But what is never available in electronic health records is the context of the accident; so where did it happen? What were some of the environmental factors?

When you start to combine that with police data and EMS data that provides more of the contextual information that then gives you a different perspective not just who is getting injured but where they are getting injured. And it has allowed us to ask questions about urban design, roads, do we need a traffic light, education campaigns, and, in fact, if you go to the Boston Cyclist Union website EMS information on the location of accidents is posted there and it's informing the cycling community. It's engaging them in the dialog to improve safe cycling in Boston. I think it gets you more to a holistic manner. It would be impossible to have providers to provide detailed information on the injuries but there are other data sources we can harvest to get a more clear understanding of what some of the interventions are that need to be occurring.

Art Davidson – Denver Public Health Department – Director

Thank you, Julia; an excellent example. I have a question for Rich or for Gillian if we still have a moment here. I'm intrigued by the ESP model and I want to know the relationship between ESP model. Do all the practices that contribute data to that public health surveillance system have to have a similar sort of data model that you have developed for the Mini-Sentinel like the virtual data warehouse or is this using a different approach to aggregating data?

Richard Platt – Harvard Medical School

Well, let's see, ESP takes data from the EHR—It doesn't care which EHR it is—and it puts it in a standard format. It's one from which you could derive a CEDV but this happens to be somewhat richer to support some of the uses that we've been talking about. ESP can inhale data from any EHR, puts it in ESP format and then, that's available for the multiple uses. We talked about three of them today; notifiable disease protection reporting, syndromic surveillance, and then, chronic disease surveillance, which can also be the target of individual queries. Last week I know you heard about the work that CDC is doing to try and do VAERS reporting, vaccine adverse event detection reporting, and that's also work that is being done in these same platforms. Once the data is in this format it can be useful for a whole variety of uses and kind of risqué approach to interrogating the data is one that will support the sort of three levels that you asked about earlier and that Jim Buehler talked about.

Art Davidson – Denver Public Health Department – Director

So if we were to think about the opportunity here and ONC's opportunity is really about setting Meaningful Use criteria and then certification, would the EHRs need to be able to put the data in to some standardized format? I understand that you built an ESP that's capable of receiving but Jim and Julia and others have spoken to this is not a great time for us to be building strong tools in a public health environment so what would we be doing with the EHRs to allow them to align the data for public health to be using them better?

Richard Platt – Harvard Medical School

They'd have to put it in some format. They don't have to put it in ESP format but they have to put it in some format so that when you ask about type 2 diabetes everybody's recognizing the same thing as type 2 diabetes. And so I think the basic idea of query health is that there be sufficient capability to do that translation from the algorithm that says, "this is what we call type 2 diabetes" into the data that can be readily extracted from EHRs. That's a short answer to a very important question that would take a longer discussion really to get to the bottom.

Art Davidson – Denver Public Health Department – Director

Right. I do think we need to continue in this discussion vein; not today, yes.

Charlene Underwood – Siemens Medical – Director, Government & Industry Affairs

Just one clarifying question on that—this is Charlene again—in terms of that data—and this would just be helpful in the context of the SNI framework and that work—have those data requirements been identified through the SNI process so that we know that whatever the extract mechanism is we're standardizing the data to meet the requirements? Again, we've talked a lot about a lot of different domains here so that might be too broad of a question.

Richard Platt – Harvard Medical School

Right. I think we need to do a little more homework to answer that well.

Jim Buehler – Centers for Disease Control – Public Health Surveillance Program Office – Director

This is Jim if I could just inject quickly, I think we should take lessons from the observation that reporting to cancer registries is proposed now in Stage II, and they're ready because the cancer community as part of the cancer registry enterprises really worked very hard to take an approach that looks across all the different forms of cancer and standardize as much as possible whereas we haven't done that. Even though we've been doing infectious disease surveillance for many, many more years we haven't developed the rigorous approach to developing standards and we also need to think about that for chronic disease surveillance. So really making sure that the public health community and the clinical community can get together and really think about what those standards ought to be would be really critical.

Richard Platt – Harvard Medical School

Right. I'll just say that the approach that we've been using—I want to particularly recognize the work that my colleague Mike … is not to have the EHRs do the identification of, let's say, type 2 diabetes or acute hepatitis B, but to export the basic information that can then be tackled by algorithms that could be very sophisticated and that might change over time. It would be a lot of work to build that in to every EHR. It's not so much work to build it in to the query system.

Peggy Honoré – Office of Healthcare Quality, Office of the Assistant Secretary for Health – Director, Public Health System, Finance, and Quality Program

This is Peggy. Could I make one general comment?

Art Davidson – Denver Public Health Department – Director

Yes, please. We're going to have to go to public comment too.

Peggy Honoré – Office of Healthcare Quality, Office of the Assistant Secretary for Health – Director, Public Health System, Finance, and Quality Program

Just a comment about it not being the time to implement some of these innovations. The feedback that I get from state and local public health is that there's a certain sense of urgency that these capabilities are made available to them. I would say especially with the emphasis at CMS on the triple aim and the reduction of cost being one of those aims I definitely see and state and local public health certainly sees how they could contribute to that with these enhanced innovative kinds of technologies and capabilities. I know it's a trying time. I know there are multiple competing priorities but the feedback I get is that there's a sense of urgency for this to happen.

Art Davidson – Denver Public Health Department – Director

Thank you, Peggy. I think MacKenzie, we're ready to open the line for a few public moments of comment here.

MacKenzie Robertson – Office of the National Coordinator

Sure. Operator, can you please open the line for public comment.

Public Comment

Operator

We do not have any comments at this time.

Art Davidson – Denver Public Health Department – Director

Thank you, operator. Just once again I'd like to thank my colleagues for preparing this session and most importantly I'd like to thank our panelists for the thoughtful discussion, presentations, and we look forward to speaking with you again in the next several months as we try to come up with some recommendations for the Meaningful Use Workgroup to present back to the HIT Policy Committee. Thank you all once again and have a good day.